

# THE SECRET DOCTRINE AND MODERN SCIENCE

---

The Blavatsky Lecture  
1922

BY  
BERTRAM A. TOMES



LONDON  
THEOSOPHICAL PUBLISHING HOUSE, LTD.  
9, ST. MARTIN'S STREET, W.C.2

Olcott Library and Research Center  
THE THEOSOPHICAL SOCIETY IN AMERICA  
WHEATON, ILLINOIS 60187

Property of

**The Olcott Library  
and  
Research Center**

The Theosophical Society  
in America  
P. O. Box 270

Wheaton

Illinois 60187





# THE SECRET DOCTRINE AND MODERN SCIENCE.

---

THE Science of 1922—that present statement of Natural Law, intuitively discerned by experience amid experimentation, mathematically expressed and empirically demonstrated, which aims to explain and illustrate the observed phenomena of the Universe—is not the Science of the day, when Madame Blavatsky penned the commentaries and illumined and reaffirmed the teachings of the Secret Doctrine. Much of the materialism and fatalism of the Science of her day are gone, and her voluminous contentions opposing these two occult objections which so largely dominated the scientific mind of 1890, have been fully justified in the progress of Science since that date. She warmly contended for a spiritual and not material origin of existences, that “there can be no possible conflict between the teachings of occult and so-called exact science, whenever the conclusions of the latter are grounded on a sub-stratum of unassailable fact,”<sup>1</sup> and that “it is only when its more ardent expo-

<sup>1</sup> “Sec. Doc.,” Vol. I., p. 517.

## THE SECRET DOCTRINE

nents over-stepping the limits of observed phenomena in order to penetrate into the Arcana of Being, attempt to wrench the formation of Kosmos and its LIVING FORCES from Spirit and to attribute all to blind Matter that the occultist claims the right of disputing and calling in question their theories." The Science of to-day supports her views. Her assertion that "Science is slowly but surely approaching our domain of the occult and is forced by its own discoveries to adopt  *nolens volens*  our phraseology and symbols,"<sup>2</sup> expresses a truth self-evident to all thinkers. That honest doubting of the scientist which hesitates to go beyond the justification of observation, combined with that tireless investigation of observed variations and exceptions and re-investigation of already explored fields in the light of further discernment and statement of Law, and that persistent hesitancy to finally accept what is not fully attested, have enabled him to penetrate his veils of gross materialism and blind fatalism and to discover a more living purposeful spiritual Cause.

To-day, materialism and fatalism are but appearances within seeming effects and manifestations; they are by no means the causes of universal expression and experience.

The present relationship between modern and occult Science is best understood by reviewing the progress of Science from these two conten-

<sup>2</sup> "Sec. Doc.," Vol. I., p. 600.

## AND MODERN SCIENCE.

tions, so strenuously combated by H. P. B.—materialism and fatalism.

The “ground” of Science has been moved from Matter to the Aether or to that geometrical World Continuum of which the Relativists speak. Matter is now considered an effect of an intangible something the sub-stratum or Laya of both occult and modern Science. This “Aether is not Matter,” declared Sir O. Lodge last year in Edinburgh, “but it seems to be the stuff of which Matter is made.”<sup>3</sup> This “stuff,” H. P. B. describes as “Matter on quite another plane of perception and being,” and she adds “it can neither be analysed by scientific apparatus nor appreciated or even conceived by the scientific imagination unless the possessors thereof study the Occult Sciences.”<sup>4</sup> Hence, rather than speak of an imperceptible Aether, a negative perception, the Relativist prefers to speak of that No-thing-ness whence Matter springs as a World Continuum. Ever since the three grains of Radium in fifteen grains of Barium Chloride, which Madame Curie separated from her Pitchblende was found to be 3° F. warmer continuously than its surroundings, and to be transmitting this heat energy to other bodies, without apparent loss of energy itself, the scientist has been concerned lest his best established hypothesis—the Conservation of Energy—should receive its death blow. It was thus that the electron was discovered and it was

<sup>3</sup> “Speech through the Aether” (Edinburgh, 1921), Sir O. Lodge.

<sup>4</sup> “Sec. Doc.,” Vol. I., p. 529.

## THE SECRET DOCTRINE

not long ere electronic emanations of Radium in a Crookes' tube were shown to set up a state of manifestation as Helium, by Ramsey, who thus chemically demonstrated a transmutation of the elements, as well as discovered solar Helium on earth. The ultimate atoms of the Chemist's elements are now found to be not simple; they are complexes of electrons. Each scientist's atom is a miniature solar universe, with a positive electric nucleus as sun, and with negative electrons—seeming vortices of electricity—as revolving planets: all balanced and ordered and with relative sizes, motions and distances apart, corresponding with those of our own solar universe. We might imagine ourselves on one such tiny electron planet, careering round our miniature sun, watching the effect of the bombardment being made by Professor Rutherford<sup>5</sup> from outside our system, on our nucleus sun, in his attempt to release some of its locked-up energy, and realise those Alpha projectiles as comets always missing that sun, though they may displace an electron planet or two while passing round it in parabolic orbits; just as we normally sense ourselves on our revolving terrestrial globe, watching solar happenings. In our normal consciousness, however, we only sense the accumulations of such miniature universes, which cohere and appear as inert Matter. For the atom sheaths are but the woven motion traces of the electrons.

<sup>5</sup> *Vide* "Artificial Disintegration of Elements" (*Chem. Soc. Journal*, March, 1922), Prof. Rutherford.



## AND MODERN SCIENCE.

So frequently do these electrons repeat their tiny orbits, moving at speeds of tens of thousands of miles per second that they give fixed substantiality to their motion traces, and yield the appearance of solid matter, the kind of matter depending upon the number of electrons in the atom universe, and the beauty of their weaving. The Secret Doctrine spoke of this, long before the discovery of the electron thus: "Matter is most active when it appears inert, its particles are in ceaseless eternal vibration, so rapid that to the physical eye the body seems absolutely devoid of motion and the spatial distances between those particles in their vibratory motion is—considered from another plane of being and conception—as great as that which separates snowflakes or drops of rain."<sup>6, 7</sup> Thus the tangibility, density, opacity, and varieties of Matter are but effects and appearances of electronic involution, and the electron itself but an electric vortex of energy harmonically conditioned and related to a positive nucleus from which it would seem to have been purposively projected in order to promote manifestation. The development of the theory of quanta by Moseley, the inner electronic explanation of the periodicity of the chemists' elements as arranged in Mendelejeff's table, the work of last year on "isotopes," or loosely and well-woven types of atoms revealing

<sup>6</sup> "Sec. Doc.," Vol. I., p. 553.

<sup>7</sup> This quotation seems to be a S.D. forecast of the electron, and constitution of the atom, but it may be the occult view of Atoms in Molecular structure, as shown by the work of Professor Bragg (*Chem. Soc. Journal*, 1916, "Recent Work on X-rays and Crystals").

## THE SECRET DOCTRINE

slightly variant atomic weights, and the bombardment of nuclei in the Cambridge laboratory are slowly revealing the constitution of the atom whose materialism is disappearing in thin air, so to say. Matter has become a modification of the intangible Aether. Materialism disappears in its own essence as the mind penetrates the veils of mere sensation into the realms of intuitive discernment and of the philosopher's stone into that region of the occultist's CONSCIOUS SPIRITUAL QUALITY<sup>8</sup> which "in the manifested Worlds is, in its Objective-Subjectivity like a film from the Divine Breath to the gaze of the entranced seer, and spreads as it issues from Laya throughout Infinity as a colourless spiritual fluid." "Give me matter and motion, and I will construct the universe,"<sup>9</sup> said Descartes in the seventeenth century. "The mind reverses all this," says Professor Eddington to-day, "give me a world—a world in which there are relations—a world which is the universal substratum of things—and I will construct matter and motion." So much for the old materialism!

The fatalism and fortuitousness of Nineteenth Century Science is perhaps best exemplified in its Darwinian theory of Natural Selection and Survival of the Fittest as the origin of species and the cause of biological evolution. This theory H. P. B. did not hesitate to refute on all occasions.<sup>10</sup> "We are told," said she, "that while

<sup>8</sup> "Sec. Doc.," Vol. I., p. 309.

<sup>9</sup> "Space, Time and Gravitation," Eddington, Chapter XII.

<sup>10</sup> "Sec. Doc.," Vol. II., p. 718.

## AND MODERN SCIENCE.

every other heresy against modern science may be disregarded, this our denial of the Darwinian theory as applied to man, will be the one unpardonable sin." Natural Selection, in her humble opinion, "Selection as A POWER—is in reality a pure myth : especially when it is resorted to as an explanation of the origin of species. It is merely a representative term expressive of the manner in which 'useful variations' are stereotyped when produced. Of itself 'it' can PRODUCE NOTHING, and only operates on the rough material presented to 'it.' The real question at issue is : What CAUSE combined with other secondary causes, produces the 'variations' in the organisms themselves?"<sup>11</sup> To-day, Natural Selection and survival of the fittest as determining factors in the origin of species have indeed become but terrestrial manifestations of an inner spiritual causation and purposiveness, certainly not yet fully realised but nevertheless adumbrated through Mendelian experiment. For since the recovery of Mendel's MSS., and its mathematical influences in determining dominant and recessive characteristics within heredity have been widely put to the test, the causes of variations in species have been removed from external nature and nurture, to be attributed to the inner functioning entity-life itself, though it is not yet exactly realised how the individual influences the selection of the characteristics of his own heredity. Release the inhibiting factors on the organism,

<sup>11</sup> "Sec. Doc.," Vol. II., p. 684.

## THE SECRET DOCTRINE

promote the conditions for the fuller manifestation of the life-entity and the life itself will produce the necessary modifications of its organism, and express the enhanced faculty and powers required by a progressed species. Professor Bateson and his *confrères* are feeling towards the fuller realisation of this and are making biological enquiry as to where the life-entity begins to express those dominant Mendelian characteristics allotted by Karma (or Fate as Science still says) to condition the vestures of its coming organic existence. That control is found to begin in the fertilised cell itself. Professor Dendy states that it has been traced to the form and arrangement of the chromosomes of that single fertilised cell, the mode of whose first mitosis or cell-division determines the morphological character and faculties of the organism being generated. "It will resemble either parent just in so far as it starts life (existence) with the same potentialities inherent in the germ plasm, as a whole and in its special factors,"<sup>12</sup> says he.

There is however a restricted fortuitousness still apparent, for that which determines the special selection of "acquired factors" is still obscure to Science. To the professor "The life of the individual is like a game of cards, in which a very great deal depends upon the shuffling of the pack and the player has to do the best he can with the hand dealt out to him. He may make a hopeless

<sup>12</sup> "The Stream of Life" (Edinburgh, 1921), Professor Dendy (*Nature*, September 15th, 1921).

## AND MODERN SCIENCE.

failure of it or a great success ; but still the stream of life <sup>13</sup> <sup>14</sup> flows on ever gathering and combining new experiences, ever forming itself into fleeting individualities and leaving them to perish on its banks as it passes on to fresh attempts at self expression." The occultist can realise this lingering yet restricted sense of fatalism, for to the scientist "life" and "consciousness" are defined still as merely functions of organisms, while to the student of the Secret Science they are the witnesses of the union between inner life soul entity and outer biological means of experience and existence. The occultist, too, would read "personality" for "individuality" in the quotation and so find it a scientific acknowledgment of the occult law that Life presses for experience and expression into existence as re-incarnating entity, under the abiding law of readjustment. By realising the immutable working of intelligent, just, purposeful Karmic Law, the Theosophist recognises the truth of the utterance without its fortuitousness and secures for every individual the full self-responsible development of his potentialities, within and by means of those hereditary vestures so factorially restricted and selective, for such are his mathematically determined means of spiritual growth and soul unfoldment.

<sup>13</sup> "The Stream of Life" (Edinburgh, 1921), Professor Dendy (*Nature*, September 15th, 1921).

<sup>14</sup> "Life" to Professor Dendy is, of course, vitality or Physical Prana, and its stream is a stream of protoplasmic cell-segmentation, a stream of plasm vitality. In this passage, however, read it how you will, "life" surely must connote more than this mere vitalism.

## THE SECRET DOCTRINE

“Complete,” says H. P. B., “the physical plasm, the germinal cell of man with all its material potentialities, with the spiritual plasm so to say . . . and you have the secret if you are spiritual enough to understand it.”<sup>15</sup> Meanwhile we note the wane of the fatalism of science. The cause of limitations and variations in species is known to be within the organism and to have to do with the life itself. It does not lie in outer circumstance with its happening and accident. Indeed there appears reasonable hope of an early fulfilment of H. P. B.’s forecast. “The day may come when Natural Selection, as taught by Mr. Darwin and Mr. Herbert Spencer, will, in its ultimate modification, form only a part of our Eastern Doctrine of Evolution, which will be *Manu and Kapila ESOTERICALLY EXPLAINED.*”<sup>16</sup>

The materialism of Science has disappeared, its fatalism is waning. OBJECTIVE MATERIALISM is being replaced by SUBJECTIVE CONSCIOUSNESS, its FATALISM is becoming an aspect of an EMERGING PURPOSIVENESS. We will shortly examine this happening, always expected by the occultist who regards existence from the standpoint of the Secret Doctrine. That the scientist is now viewing his universe from the mental ground of subjective consciousness, not from the ground of seeming hard facts, which are proving at best to be only relative and transient, means that he is being compelled by his discoveries to adopt the

<sup>15</sup> “Sec. Doc.,” Vol. I., p. 244.

<sup>16</sup> “Sec. Doc.,” Vol. I., p. 657.

## AND MODERN SCIENCE.

occultist's ground of discernment. "From the very beginning of æons the mysteries of Nature were recorded by the pupils of those invisible heavenly men (adepts) in geometrical figures and symbols. The keys thereto passed from one generation of wise men to another."<sup>17</sup> Like the occultist the scientist has adopted a world-geometry, a mental aid to the understanding of all truth whether as spiritual cause or physical expression. "We did not consciously set out," says Professor Eddington, "to construct a geometrical theory of the world, we were seeking physical reality by approved methods and this is what has happened. As the geometry became more complex, the physics became simpler; until finally it almost appears that the physics has been absorbed into the geometry."<sup>18</sup> The story of the weaving of this thought-form or geometrical concept of space-time and of the formulation of Einstein's generalisation, the key to the Relativity Theory of explanation of the Universe in connection with its usage, is one too long to tell in detail. We can only briefly note the steps making for their elaboration.

We first notice how science has a passion for weighing, measuring and computing, and for exactly expressing the relationships between all variable and relative things—like mass, density, length, time—as statements of letters, full of significance, called formulæ. Every law in science

<sup>17</sup> "Sec. Doc.," Vol. I., p. 671.

<sup>18</sup> "Sp., T. and Grav.," XII., Eddington.

## THE SECRET DOCTRINE

has its mathematical form, which conveys precise information to the mind. The aim of science is to make each formula as comprehensive and widely applicable to the phenomena of existence as possible. Thus when in the empirical application of any law, variant results appear, the variant must be explained as no exception to the law as stated, or the formula must be modified to include it, even replaced by another more comprehensive and inclusive if it does not do so. We have already seen how that well-established law—the conservation of energy—seemed threatened by the discovery of Radioactivity in Radium, and how it was explained in terms of that law. In this case while science advanced to the study of atom complexity, and the immateriality of Matter, the law remained in its old form, but with a deeper mental significance within its statement. There are certain laws in Nature however, notably those of dynamics and gravity, whose mathematical garb cannot be retained, if they are to comprehend and include all observed facts. As they still stand, they are ordinarily serviceable in a restricted earth gravitational field and for the approximate computation of the ordinary motions of our every day utilitarian world plane. But when applied to stellar gravitational fields and to atoms, to the immense velocities of electrons, light and heat pulses, such grave inaccuracies of calculation appear, that it is evident that a more universal, true, absolute, mathematical and geometrical form of these laws must be sought.



## AND MODERN SCIENCE.

For example, a ball thrown along the corridor of a fast moving express appears to the thrower to have the motion conditioned by the same dynamic laws, to be able to have its velocities and accelerations and track determined by the same formulæ, as when thrown along the same corridor when the express is stationary at a station. Allowing for the relative motions of observers it should be possible for an observer in the express and one on the railway embankment to compute these motions, using the same formulæ. But the results prove only approximately identical. Now the observer in the express may be likened to yourself on an electron whirling in its orbit in an atom universe, and the observer on the track as yourself watching that motion from your terrestrial view point, or again to yourself on the earth, and yourself removed to, say, the sun or some stellar mass observing earth motions. Three sets of formulæ appeared to be needed to work out the motion problems of these observers differently situated, and the laws of Nature appeared to run their courses differently, according to the observers' bases of reckoning. Formulæ were multiplied, adaptations became too numerous, confusion of thought was engendered. The problem became acute ; could one set of laws be propounded, one set of formulæ be devised, it was asked, equally applicable by all, making corrections for their relative motions while observing ; *i.e.*, could dynamic law be expressed as it is, in absolute form ? Einstein has succeeded, using the

## THE SECRET DOCTRINE

Fitzgerald contraction and the Lorentz transformation factors for space and time, in determining this dictionary statement of the law, to be consulted and used with certain safeguards by all observers with equal accuracy, whatever their relative bases of reckoning. The idea of ONE LAW, but many manifestations of it, grows.

This noted, we can now pass to the attempt of scientists to contact the Aether through its drift and observe the far-reaching results of their efforts. That there must be a drift in the Aether since earth moves in space and light moves in aether seems inevitable. Can its setting be found? Now it is easily demonstrated that a swimmer takes longer to swim a measured distance up and down stream than he takes to swim the same distance across and back over the tideway, owing to the stream's drift. Can we not arrange to watch light swimming in the aether in rectangular directions and so contact the aether through its drift? Michelson and Morley thought so, when they set down the courses with mirrors to direct the light rays and a diffraction register to register the winning ray. But set their instrument as they would, the result was always a dead-heat. The velocity anomaly of Fizeau's experiment of fifty years ago seemed confirmed, light appeared to be an exception in its velocity to all dynamic law. What was the explanation of this apparent anomaly and of this failure to detect the aether drift? Science traced it to the apparatus, and it is now known that owing to the electro-magnetic

## AND MODERN SCIENCE.

nature of cohesion between the molecules of matter forming the instrument, the instrument automatically and naturally foreshortens in the direction of the aether motion or drift; and since all measuring rods used to test the instrument must suffer a like relative foreshortening, it is impossible physically to detect and observe this. So light, after all, is amenable to dynamic law. What really happens is that the distance between any two points in the universe varies with the velocity of motion of the body of reference carrying them. Similarly the value of the second of time is shown to increase with the velocity of the body carrying the clock, up to a limiting value of the velocity of light, which appears as one of the terms of the Fitzgerald ratio used in the Lorentz transformation factors which makes dynamic laws of universal application. "The rigid rod," says Einstein, "is thus shorter when in motion in the direction of its length than when at rest, and the more quickly it is moving the shorter is the rod . . . also the time which elapses between two strokes of the clock in motion is not one second but a somewhat larger time."<sup>19</sup> When such corrections of clocks and measuring rods are allowed for, then, as Einstein's restricted principle of relativity states, natural phenomena run their course in relative uniformly-moving co-ordinate systems of reckoning  $K$  and  $K'$ , providing such be without rotation, according to exactly the same general laws. Einstein has since extended

<sup>19</sup> "The Theory of Relativity," Einstein.

## THE SECRET DOCTRINE

this principle to accelerated systems of rotational motion, and in giving general application of the principle of relativity through the principle of the equivalence of inertial and gravitational stresses has supplied us with a law of universal gravitation of which Newton's law  $m/d^2$  is the earth-limited expression, *i.e.*, he has refined and extended the application of Newton's law, giving it a universal form and significance.

The occultist is not slow to grasp the principle of simultaneity or mode of conscious reckoning, for the scientist's point of reckoning is by the relativity theory transferred from space to consciousness, and he early reflects on the length of that rod moving in the direction of its length, and on the value of the "second" interval, when the motion is as rapid as light. Increase velocity and length shortens. The distance between two points becomes less and less the faster the motion, until at the rate of light there is no distance between them. With rate of light the dimension has shrunk to nothingness and the two points are not distinct, but identical and essentially one. Differentiation ceases with simultaneity.<sup>20</sup> Separation is thus an illusion of relativity, space vanishes

<sup>20</sup> The full problem is one of three space dimensions disappearing and not of one only. It is therefore not so simple as suggested here. The principle of "shear" or what disappears as length reappears as breadth and thickness compensatively does not dominate it, however, as some think. The ground common to both physics and psychology needs to be fully stated before the merging of differentiation of relativity into the unity of reality can be explained. For this shortening of dimension with velocity appears as much a phenomenon of consciousness as of physical objectivity.

## AND MODERN SCIENCE.

as we know it, with the attainment of the velocity of light. The time interval of the second, too, increases until it embraces time eternity and expresses an "eternal now" at that light limit. We would seem to have attained here a mathematical comprehension of Samadhi, where the seer in meditation contemplating at-one-ment with the Divine realises a Nirvanic identity, for within this simultaneity or at-one-ment, man is all differentiations of the objective universe and he can anticipate time happenings, *i.e.*, he is omniscient; more, his moment of consciousness comprehends all moments, *i.e.*, he has become endowed with Cosmic consciousness.

Or again, in our orbit we, standing on the earth's surface, really move more than half a mile a second faster at midnight, than at midday, owing to the blending of the rotational and revolutional motions of the earth. The hour of noon is thus *really* shorter than the hour of midnight, while the hours between are really gradually increasing or decreasing to these limits. We do not think so because our organisms are relatively conditioned to these variations, and we seem to be able to do the same amount of work in every hour of the day. Yet the ego life within the organism senses subjectively this relativity. May not that morning urge and afternoon sense of lag we feel be due to it, and may not the weakness of vitality at the midnight hour be due to the difficulty of entity to retain vital grip on the organism owing to its larger pulses in the longer hour, which *really*

## THE SECRET DOCTRINE

then obtains ? The fittingness of dawn and dusk for meditation too, are the rectangular motions of revolution, rotation and light at these times such that a physical poise and repose are then most possible ? Perhaps we have in the idea a key to the physical demonstration of Nature's finer Occult forces, and to a proof to man, that he the Monad is conditioned to the Infinite, while his person is alone bound to terrestrial relativity ! To explore this interesting side track, however, is to depart from the purpose of this study.

To return, terrestrially then, there can be no such thing *really* as "the" distance between two points and "the" time between two world events. Both are relative to earth conditionings. The problem of finding the geometrical relationships among point-events in Space-Time, and of conceiving that synthesis of all possible physical aspects of nature, which we are told is *physical Reality*, has been no easy one. Space-Time has been shown to be non-Euclidian. It has also been shown to be four-dimensioned, with time as a mind confusing hyperbolic fourth-dimension.<sup>21</sup> Minkowski's four-dimensioned world is by no means Hintonian, and from Riemann's geometry we learn that there can REALLY be no such things as a straight line and flat surface in Nature, although they appear so to our eyes,

<sup>21</sup> Time is negative in sign in the Lorentz transformation factors, Minkowski's 4-dimensioned Space, and in Gaussian reckoning too (though here manipulated). Beyond simultaneity of night it becomes positive. The student of the Occult will profitably note this, in its connection with Consciousness.

## AND MODERN SCIENCE.

so that the feat of trying to visualise Hinton's tesseract with its solid sections of straight edges and flat faces is a more impossible task than ever. When we add to this the Gaussian co-ordinates and the molluscs of that system's continua, the normal lay mind reels before the passion of the scientist to express REALITY as it Is. He has however succeeded in removing himself to a conscious subjective situation from which he propounds a new theory of the Universe, using Einstein's formula of gravitation as his starting point and geometry as his basis.

"The new law of gravitation," says Prof. Eddington, "is not a law in the sense that it restricts the possible behaviour of the substratum of the world, it is merely the definition of a vacuum. We need not regard matter as a foreign entity causing a disturbance in the gravitational field; the disturbance is matter. We do not regard light as an intruder in the electro-magnetic field, causing the electro-magnetic force to oscillate: the oscillations constitute the light. Nor is heat a fluid causing agitation of the molecules of a body; the agitation is heat."<sup>22</sup> All this has been said by occult science. As H. P. B. says, "The occultist does not deny—on the contrary he will support the view—that light, heat, electricity and so on are affections not properties or qualities of matter. To put it more clearly; Matter is the necessary condition for the manifestation of these Forces of this plane."<sup>23</sup>

<sup>22</sup> "Sp. Time and Grav.," XII., Eddington.

<sup>23</sup> "Sec. Doc.," Vol. I., p. 536.

## THE SECRET DOCTRINE

Science begins to speak of affections now, not causes. Causes are still hidden, they lie in the occult.

The results of the theory of relativity are already too numerous to mention. By it the laws of Science have been simplified and reduced in number, conservation of mass and conservation of energy have been made identical, light moving rectilinearly in pure space, has been shown to move curvilinearly in gravitational fields, while the Space-Time Universe itself, infinite to our waking conscious sense as it appears has been shown to be finite though unbounded—a fragment of the Divine separate from true Infinity by a scientific Ring Pass-Not. Prof. Eddington in *Space-Time and Gravitation* sums up the whole thus:—"The theory of Relativity has passed in review the whole subject matter of Physics. It has unified the great laws which by the precision of their formulation and the exactness of their application have won the proud place in human knowledge which physical science holds to-day. And yet in regard to the nature of things this knowledge is only an empty shell—a form of symbols. It is knowledge of structural form and not knowledge of content, which must surely be the stuff of our consciousness. Here is a hint to aspects deep within the world of physics and yet unattainable by the methods of physics. And moreover we have found that where science has progressed the farthest, the mind has but regained from nature that which the mind has



## AND MODERN SCIENCE.

put into nature. We have found a strange footprint on the shores of the unknown. We have devised profound theories one after another to account for its origin. At last we have succeeded in reconstructing the creature that made the footprint. And Lo! it is our own."<sup>24</sup>

The scientist so defines his upward limit of consciousness. "It seems as though a definite task has been rounded off, a natural halting place reached," says he. The Secret Doctrine confirms this. "Science cannot, owing to the very nature of things, unveil the mystery of the universe around us. Science can, it is true, collect, classify and generalise upon phenomena; but the occultist arguing from admitted metaphysical data declares that the daring explorer who would probe the inmost secrets of nature must transcend the narrow limitations of sense and transfer his consciousness into the region of noumena and the sphere of primal causes. To effect this, he must develop faculties which, save in a few rare and exceptional cases, are absolutely dormant, in the constitution of the off-shoots of our present Fifth Root-Race. He can in no other conceivable manner collect the facts on which to base his speculations."<sup>25</sup>

Before proceeding towards this unknown content, with the occultist, let us glance briefly at the further fact that the fatalism of science is becoming an aspect of an **EMERGENT PURPOSIVENESS**. The scientist is beginning to emphasise an emer-

<sup>24</sup> Chapter XII.

<sup>25</sup> "Sec. Doc.," Vol. I., p. 518.

## THE SECRET DOCTRINE

gent evolution, rather than an evolution marked by a sequence of cosmogonical events and biological organisms. What is Emergence? Prof. Lloyd Morgan defined the principle thus. "When oxygen having certain properties combines with hydrogen having other properties there is formed water, some of the properties of which are quite different. The weight of the compound is an additive RESULTANT and can be CALCULATED BEFORE THE EVENT. Sundry other properties are constitutive EMERGENTS, which could NOT BE PREDICTED IN ADVANCE of any existent example of combination."<sup>26</sup> This gives the clue we need. Nature is ever combining, making complexes and uniting them into higher complexes. Atoms, globes, plasmic cells, organisms are complexes and complexes of complexes—in ever rising graduation of unification as well as complexity, till even unit yet complex men are complexed into a universal brotherhood of a one humanity. Note how each complexing gives expression to some new manifestation of life, in the form of matter, vitalism, instinct, intelligence, how, as it were, that which is imminent becomes revealed by the complex-ordering of Nature. Vol. II. of the Secret Doctrine is eloquent of this principle, man as responsible free-willed intelligence emerging from a complexing of the works of Kosmos. Science is now beginning to remark this emergent purposiveness. Let us

<sup>26</sup> "Consciousness and the Unconscious" (Sec. J. Brit. Assoc., 1921, Prof. Lloyd Morgan; *vide* "Progress of Science, 1921").

## AND MODERN SCIENCE.

briefly apply this principle of emergence to the universe from the Aether to man, watching the growing complexities, noting the emergencies. The world is full of miracles. The un-expected happens, arrives and exercises a determining control, dominating the situation. "The vagaries of a fire can be calculated with a Laplace calculator . . . but no mathematician alive can compute the orbit of a common house fly," said Sir O. Lodge in 1913, "Life introduces an incalculable factor."<sup>27</sup>

The appearance of matter, inert matter as a complexity of the aether has been noted already. The appearance of a terrestrial globe in an organised solar system has next to be observed. The tale of how the homogeneity of Space became curds, which becoming radiant and massed gave rise to the stellar universe and the Solar system is told in the Stanzas of Dzyan. "He," Fohat, the intelligent universal one energy, "collects the Fiery dust, makes balls of Fire, runs through them, and round them, infusing life thereinto, then sets them in motion, some one way, some the other way. They are cold, he makes them hot. They are dry, he makes them moist. They shine, he fans to cool them"<sup>28</sup>—so runs that archaic utterance. The scientist sees these curds or nebulae first at their dull red luminosity as giant M stars,<sup>29</sup> and traces them

<sup>27</sup> "Continuity" (Brit. Assoc. Pres. Address, Lodge, 1913).

<sup>28</sup> "Stanzas of Dzyan," VI.

<sup>29</sup> *Vide* "The Internal Constitution of the Stars" (Brit. Assoc., 1920), Eddington.

## THE SECRET DOCTRINE

from this first stage of visibility to that critical point of white hot compacted perfect gas, the dwarf B type stars, of which our sun is one. Then the cooling to liquids and solids in the formation of our solar system of planets, dark globes orbitally moving round the sun is duly noted, and the globe of inorganic matter with all its terrestrial conditionings for organic existence emerges, the unexpected arrives—our earth globe. In passing, let us realise that recent investigation of stellar constitution has considerably modified the nebular and other hypotheses of terrestrial and celestial origins : for instance, the old cause of stellar heat being due to the contraction of mass is quite exploded, a new theory is being sought.

But to return, the next unexpected emergence was vitalism. No one could have anticipated it, but it arrived. A limiting complexity of inorganic compounds was reached on earth. The unassociated<sup>30</sup> elements and binary compounds of a sun became complexed to the limit of alums and the like on the earth, and an inorganic evolution was consummated. Then the chemist life began to combine these complex molecules themselves, and colloids appeared, responsive to light or photosynthetic, forming those colour screens of pigment and chlorophyll which select such light factors as will permit of vitalism, rigidly excluding the harmful rays. The result was that another nucleated unit emerged. Just as nucleated atom

<sup>30</sup> *Vide* "Photosynthetic Processes in Air, Land, Sea," Moore (*Chem. Soc. Journal*, October, 1921).

## AND MODERN SCIENCE.

and solar universe so nucleated protoplasmic cell appeared to mark a period of life involution. For the protoplasmic cell is but colloidal matter plus nucleus and chromosomes in a cell wall. The mystery of its appearance again lies in the nucleus, yet its coming made organic structure possible, for there is no plant or animal organism which is not an aggregate of cells, and which do not start existence as a single protoplasmic cell.

But given vital organic matter could sentience and instinct be expected? The complexing of these plasm cells into plant and animal organisms, and their vital powers of complexing inorganic carbon dioxide, water and what not into organic complexes called starch, cellulose and the like, have nevertheless shown the release of sentience and an instinctual awareness which controls the organism. The Group Soul, declares the occultist, immanent and transcendant of its forms in existence is directing and ordering the experiences of those forms, imposing on them from within, a seeming rationality<sup>31</sup> so wonderful to remark in flocks of birds, swarms of insects, herds of beasts, co-operation of insects and flowers, and is drawing from those experiences the realisation of its individuality.

Then Individual Intelligence and Human Mind emerge and Man appears a terrestrial inhabitant. Again a complexing of and refining of all lower forms. Man's organic structure is an epitome of the universe, his complex a history of the universe

<sup>31</sup> *Vide* "What is Instinct?" Newland.

## THE SECRET DOCTRINE

and evolution to date, and he himself is an emergence, an intelligent revelation of the immanent and transcendent Soul-self. Nor does emergence cease here. The Occult science declares and the progress of civilisation illustrates that man as free-willed and self-responsible agent is working for a still higher complex, spelled as universal brotherhood of humanity, to be declared as the "fulness of the stature of living Christ"—a transcending complex, regenerate, is being fashioned from which shall emerge the Master of Wisdom. For aether, electron, radiant matter, inorganic mass, colloidal protoplasm, vital sentience, instinctual and intelligent mind are the emergent factors of man-making and the evolution of a manvantaric period—that time lapse 'twixt potential and perfect man.

Science is beginning to emphasise the emergences, and its relativist view point will help man to rightly assess his findings. Already are heard such words as those of Sir O. Lodge "I detect nothing in the organism but the laws of chemistry and physics' it is said. Very well, naturally enough. That is what they (the scientists) are after, they are studying the physical and chemical aspects and manifestations of life. But LIFE ITSELF—LIFE and MIND and CONSCIOUSNESS—they are NOT STUDYING, and they exclude them from their purview," or again, "flowers attract insects for fertilisation and fruit tempts animals to eat it in order to carry seeds. But these explanations cannot be final. So much beauty

## AND MODERN SCIENCE.

cannot be necessary merely to attract their attention. We have further to explain this competitive striving towards life. Why do things struggle to exist? Surely the effort must have some significance, the development some aim? We thus reach the problem of existence itself and the meaning of evolution.”<sup>32</sup>

Can any one doubt that an emergent purposiveness is becoming apparent in Nature, that Evolution will be thought of more as emergent than as biological and cosmogonical? It will more accord with the Occult teaching thus.

Meanwhile is Science about to propound a new law—the CONSERVATION OF INTELLIGENCE,<sup>33</sup> to make a trinity of laws upon which Science rests? Intelligence is both potential and manifest in the universe, just as Energy and Aether are. What is not potential is kinetic, what ceases in one form appears in another, what is not immanent is expressing itself. Energy, Aether and Intelligence are constant in this finite though unbounded world of Space-Time. The Conservations of Energy, Mass and Intelligence appear to comprehend manifestation. Why not a Conservation of Intelligence? Of course the other two have been established first. The Secret Science which has always maintained the third principle, places it beyond the other two. It is due to appear last,

<sup>32</sup> “Continuity,” Lodge, 1913 (Pres. Add. Brit. Assoc.).

<sup>33</sup> This is best approached by a preliminary study of Binet’s Scale of Intelligence (*vide* “Measure of Intelligence,” Maurice Terman). It can be extended to embrace emergence.

## THE SECRET DOCTRINE

the other two have appeared because it was there implicit though un-expressed. For man always thinks of and realises the matter and energy required to mould a pot, first, he afterwards marvels at the intelligence of the Potter, yet intelligence is ever there manifesting in the skill of workmanship, the symmetry, utility, beauty of the pot of a mere chemistry and physics. Psychology is claiming attention, a Law of Conservation of Intelligence seems impending.

It may be objected that Einstein by his principle of equivalence has unified our laws of Conservation of Mass and Energy: what then is to be the fate of a third law of conservation? A similar unification, we reply, for is there not an equivalence of inertial stress and intelligent determination and of gravitational stress and intelligent will projection as well as of inertial stress and gravitational stress? Are not aether mass, energy and intelligence or Mass, Energy, Mind, the scientists' finite concepts of the Omnipresence, Omnipotence, Omniscience<sup>34</sup> of the ONE LIFE and ONE LAW? The Einstein law of reconciliation will be extended, of course, to unify the three laws within the realisation of man, that from intuitive insight, and the fixed mark of conscious stability in the ONE REALITY, he can

<sup>34</sup> The Three Gunas of the Secret Science—Tamas, Rajas, Sattva—whose combined work is the wholeness of the Relativist's Reality, the Occultist's Manifestation. Also the Cyclopes (sentient principles), Hekatoncheires (motor powers), Titans (form intelligences) of Greek Esotericism. We note, too, how TRUE Reality recedes to THAT of which Relativist Reality is Subjective-Objectivity or Manifesting Universe.



## AND MODERN SCIENCE.

truly discern how the ONE in "three descended as four into the Lap of Maya," as the Stanza puts it and the triple relativity of Maya or existence, be found the manifestation of the ONE DARK TRUTH, THAT IS.

Granted a Conservation of Intelligence, linked to Emergent Evolution will we not through the development of that youngest of exact sciences, Psychology, still in its physical infancy, be able to penetrate that remaining mystery of physical science—the mystery of the nucleus, witness in Nature of the content within the shell of space-time? As positive radiant electric nucleus of the atom with its locked up energy as solar sun within a solar universe, as nucleus present in every vital cell, as conscious centre in every ordered organism as the "I" of man, in every differentiated relative form of its mayavic expression, it is ever mysterious, and though seen is unknown and seemingly impenetrable. To know it would be to know how it emits control over the system of which it is the focal centre, to know it in any form would yield us power and energy, and solve our theories as to causes. Prof. Rutherford cannot knock out a pure nucleus by itself.<sup>35</sup> He but hits out an

<sup>35</sup> The term "nucleus" is being used to mean a "complex," and is being said to consist of helium and hydrogen. "Results show that the nuclei of heavy atoms contain both positively charged helium nuclei and negative electrons . . . and lead to the general view that complex nuclei of all atoms are built up of hydrogen and helium nuclei with negative electrons." But the helium nucleus "is probably a secondary unit of four Hydrogen nuclei plus two electrons" (Rutherford, "Artificial Disintegration of the Elements"). The Hydrogen nucleus, too, is a nucleus plus electrons (see "Theory of Quantum"). "Nucleus" in the text refers to the pure ultimate nucleus.

## THE SECRET DOCTRINE

electron or two with his alpha projectiles, which since they must exist outside the atom in some atom form, obey the motion law and promote a differentiation of the nucleus, that is all. The nucleus cannot be separated, and it is not matter as we know it. Aether, if you like, matter of higher than sentient planes of Being, but no-thingness from the sensory physical aspect. It is of the "stuff of our consciousness." When a projectile enters it, the projectile ceases to be matter. The Secret Doctrine has always maintained all this. That nucleus has the secret of all energy of all mass of all order wherever found, its mystery is that of the apex of the Pythagorean triangle. Locked in it is wisdom, Truth, the secret of Reality, and when it shall have been explored by consciousness in all its relative differentiations, that Space-Time Garb or Shell of the ONE DARK TRUTH shall stand fully revealed, that REALITY OBJECTIVE - SUBJECTIVITY attained which is the foothold in existence of the ONE BEING.

From our study this morning of Modern Science in the light of the Secret Doctrine, we can conclude that the scientist to-day will in his way subscribe to most of H. P. B.'s statements of principles in which she sums up the teaching of the Stanzas of Vol. I.

"2. The fundamental law, the central point from which all emerges, around and toward which all gravitates is the ONE homogeneous

## AND MODERN SCIENCE.

Divine Substance-Principle. . . . It is omniscient REALITY, impersonal because it contains all and everything.”<sup>36</sup> Science now accepts a sensory NOTHING-NESS, a One Dark Truth or Content whence all relative differentiations emerge.

“ 3. The universe is the periodical manifestation of this unknown Absolute Essence . . . called essence because from ‘esse’ to be.” There may still be objection to “periodical,” but the rest might well be a relativist statement.

“ 4. The Universe and everything in it is called Maya because all is temporary therein from the ephemeral life of a fire-fly to that of the sun—a will o’ the wisp compared with the immutability of the One. Yet the Universe is real enough to the conscious beings in it, which are as unreal as it is itself.” Modern Science has a relativist text-book in the Secret Doctrine, and is declaring its relativity. The length and tangibility of an iron bar are real enough to the sense consciousness of man, but the one disappears in light simultaneity and the other into motion traces of electronic energy vortices, in the mystic heights of ratiocination, the border land of the trance consciousness of the Adept.

“ 5. Everything in the universe is conscious. Because we do not perceive signs of consciousness, say in stones, we have no right to say that no consciousness exists there.” Science is dimly realising through an Emergent Evolution, that there must be consciousness immanent planning

<sup>36</sup> “Sec. Doc.,” Vol. I., pp. 294 *et seq.*

## THE SECRET DOCTRINE

and organising, before matter could be sufficiently complexed to become the vital plasm of organisms in which intelligence could manifest.

“6. The Universe is worked and *guided* from *within outwards*. Every external motion is produced and preceded by internal feeling or emotion, will or volition, thought or mind. The whole Kosmos is guided, controlled, animated by almost endless series of Hierarchies.” The first part may be granted in the light of attested facts, but the latter part of the statement will still present difficulty of acceptance. True, the materialism of the past, that bar to the recognition of Nature-Spirits is gone, and with further recognition and realisation of the principle of Emergence and Conservation of Intelligence, the witness of Hierarchy in Nature will appear, but it will doubtless be long before exact Science accepts this statement of principle in anything like its Occult significance. Its truth appertains to that inner content, from which the space-time world of relative differentiations is produced. “Draw a deep line,” says H. P. B., “in your thought between the ever incognisable Essence and the as invisible, yet comprehensible Presence from BEYOND and through which vibrates the Sound of the Verbum and from which evolve the numberless Hierarchies of intelligent Egos of conscious as of semi-conscious, ‘apperceptive’ and ‘perceptive’ Beings whose Essence is Spiritual Force, whose Substance is the Elements, and whose Bodies (when needed) are the Atoms—and our

## AND MODERN SCIENCE.

Doctrine is there.”<sup>37</sup> If the occultist disciple to-day finds it difficult to draw this line, how much more difficult will it be for the scientist, but recently aroused from materialism to do so. We must not expect it, nor for the sure progress of Science wish it. Yet it will come. Unwise, therefore, will it be to extend our study to show the respective works of the Hierarchies of Nature Spirits of Fire, Air, Earth, and Water. The electric and conscious manifestations of Fire Spirits, the intelligent and instinctual properties of Airy or Mental Spirits, the emotions and sentiences of Water Nymphs and the inertia and factitiveness of Earth Forms are better studied in al-chemistry than chemistry, in Occult Science than Modern Science. The work of such “LIVES” is nevertheless seen in this present world of waking consciousness.

The relative knowledge of science is “knowledge of structural form, and not a knowledge of content. All through the physical world runs that unknown content, which must surely be the stuff of our consciousness. Here is a hint of aspects deep within the world of physics and yet unattainable by the methods of physics.”<sup>38</sup> So science is being convinced. How, then, shall the scientist transcend that natural halting place he believes himself to have reached to find that content the plenum of Causes, the fullness of reality. As OCCULTISM is to the OCCULT SCIENCES so is that

<sup>37</sup> “Sec. Doc.,” Vol. I., p. 690.

<sup>38</sup> Sp., Time, Gravitation, Ch. XII. Eddington.

## THE SECRET DOCTRINE

Content to Modern Science. What keys unlock the door in thither, that REALITY be ITSELF and not merely revealed through the Mental form of symbols of relative expressivity? The scientist himself mentions them.

Consciousness is one key—a consciousness alert and awake raised beyond the final efforts of ratiocination, a consciousness intuiting the intangible source of the tangible, realising the formless behind and through the form, comprehending the ONE expressed by integration of all differentiations of mass, energy and intelligence. Sensory perceptive consciousness passes the graduations of apperception, conception, generalisation to the heights of logical determination, but that is not the end. The use of such speculation in grave empiricism of life for experience stimulates and develops intuition and the mystic sense is born, before its age be it noted. For time will be when mere ratiocination will be as little prized as mere emotionalism, both will be controlled by the cultured in his automatic sub-conscious, the mystic vision will be his normal consciousness, and waking consciousness will be elevated to that height. To this end, however, consciousness must cease to be defined a mere function of organism. It must be realised as an electric spark passing from positive to negative pole, from entity to organism, with only the negative pole objective and manifest. Or shall we say that Consciousness is the summed series of such life links of discharge, and that the ONE LIFE so lights all men that come

## AND MODERN SCIENCE.

into incarnation, giving means of intelligent realisation to the prodigal son who comes to his senses in his far country of relative differentiations ?

The other key is organic complexity which means for man, wise discrimination, purposeful living, the ordering of nature and its lures, the practice of self-mastery, the training of dispassion and compassion, the promotion of altruism, the sacrifice of self-interest, self-consciousness, and self-seeking. The scientist as the occultist knows the keys to knowledge, beyond informativeness. They are in himself rather than in the phenomena he explains, and yet are found there when he discovers them in himself.

By a lively solution of present personality, and precipitation of higher altruist emergent nature, by purposeful modification of human cerebration through intuition culture, by recognition and dominance of the subconscious of desires and suggestions, waking consciousness can secure undisturbed serenity of repose and so be elevated to the contemplation of the Gnosis or Real Knowledge. But this sounds like an alchemical formula. Perhaps it is a quintessence of all such formulæ. The student of the Royal Science—Raja Yoga—can perhaps tell us.

Meanwhile, as said an adept, "Lead the life necessary for the acquisition of such knowledge and powers and wisdom will come to you naturally. Whenever you are able to attune your consciousness to any of the seven chords of 'Universal

## THE SECRET DOCTRINE.

Consciousness ' those chords which run along the sounding board of Kosmos, vibrating from one eternity to another, when you have studied thoroughly the 'Music of the Spheres' then only will you become quite free to share your knowledge with others."<sup>39</sup> Till man unveils "the secret of BEING and NON-BEING," becoming conscious of "the hidden meaning of Apollo's heptachord, the lyre of the radiant God, in each of the seven strings of which dwelleth spirit soul and astral body of the Kosmos, whose shell only has now fallen into the hands of modern Science," he cannot know Reality, he can only intelligise relativity. The power is latent in man, the faculty is dormant awaiting arousing and education. Let him live the life necessary and he shall not only discern the footprint on the shore of the unknown, and discover and know himself the creature who made it, he shall enter that unknown and identify himself with the Conscious Heart of Being. Modern Science and Occult Science shall then have become merely expressive aids to Occultism, to Knowledge, to Truth, to the Being of the ONE, THAT IS.

<sup>39</sup> "Sec. Doc.," Vol. I., p. 190.

1723-7

5-13





